

Exploring the Effectiveness of Project-Based Learning on Speaking Test Performance

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ABSTRACT

Project-Based Learning (PBL) has been widely used in language academic research. This paper reviews previous research on implementing PBL in speaking lessons with various communicative tasks, including online and offline activities. The main aim is to explore the effectiveness of the PBL teaching approach in enhancing students' oral fluency, vocabulary, grammar and pronunciation, which is from the perspective of band descriptors in IELTS speaking - an international English proficiency test. The result indicates that the four aspects in speaking band descriptors: fluency and coherence, lexical resource, grammatical range and accuracy, together with pronunciation, have all been improved through the project learning process, though the impact on fluency and lexical resource is more significant than that in grammar and pronunciation. In addition, students tend to have a more positive attitude in learning, and also play a more active role in a speaking activity.

Keywords: Project-Based Learning, IELTS, Fluency, Vocabulary, Grammar, Pronunciation

1. INTRODUCTION

1.1. Present Situation and Reflection in Teaching Spoken English in China

For a long period, it is ubiquitous that teachers in China have favored the teacher-centered method and adopted "grammar translation" in English class, in order to have a higher teaching efficiency. As a consequence, reading, listening, and writing are regarded as dominant parts of learning and testing, which results in the situation that English users are difficult to achieve fluent and native-like proficiency in speaking. Apart from this, it may also be due to the absence of awaring the significance of using English for oral communication.

In 2019, Chinese mainland IELTS candidates had an average score of 5.8. However, The average score for reading and listening were the highest, obtaining 6.2 and 5.9 respectively, which was consistent with the current situation of English teaching in China. By contrast, the average score of speaking is merely 5.4, far lower than the average mean score in speaking worldwide.

1.2. The Definition of the PBL Teaching Approach

Project-based learning (PBL) is a method that involves learning through projects, which "are complex tasks, based on challenging questions or problems, that involve students in design, problem-solving, decision making, or investigative activities; allow students to work relatively autonomously over extended periods; and culminate in realistic products or presentations" [1]. There are other defining features that were found in the paper including the authenticity of content and assessment, and teacher facilitation. And authenticity for students, teachers, parents and others, PBL has many characteristics of the adult world. However, there is no direction, and clear educational aims [2]. At the same time, another literature shows that PBL contains some other characteristics, such as students' cooperative learning and reflection with others, and integrating some adult skills into it. [3]. In view of these PBL characteristics, the PBL teaching method adds many unique properties. The definition of "project-based teaching" has the characteristics related to the use of real problems for inquiry, which will drive students' learning motivation, inquiry groups and the use of technology-

based cognitive tools. In addition, "Expeditionary Learning" is conducive to the comprehensive improvement of schools, group cooperation and the characteristics of interdisciplinary and interdisciplinary teaching [4-6].

1.3. The Difference between PBL and the Traditional Method

PBL teaching approach is different from the traditional teaching mode, since the traditional mode is a teacher-centered, textbook-centered teaching mode. The traditional classroom teaching mode often forms a situation of one-way indoctrination by teachers and passive acceptance by students. It is widely accepted that the drawbacks of this mode should not be neglected. The key is that students who should improve their cognitive thinkings are in the position of passively receiving knowledge during the whole learning process. This is particularly a problem when students are demotivated and lack of learning initiative. Moreover, this is no longer satisfies the requirements of modern society for the future workforce in the era of ever-increasing globalization. Therefore, it is imperative to change the traditional teaching model and create a more efficient classroom model to meet the needs of the new curriculum reform, where PBL, a teaching approach that has been widely used in language academic research, could play a positive role.

PBL could be helpful to improve students' active thinking ability. In PBL teaching mode, teachers work as organizers and guides to stimulate students' curiosity and critical thinking, while providing necessary help to assist students to solve the problem and accomplish the project. After the task is released, students could communicate and discuss with their group members, collect information and negotiate with each other. During this process, students could not only expand their knowledge but also cultivate their thinking ability and have a clearer train of thought when tackling challenging tasks. To be specific, students are more capable of generating new doubts and forming new ideas toward a problem, so that autonomous learning and critical thinking could be activated. In addition, PBL teaching content is more practical and comprehensive, which is suitable to make English users understand the importance of "using" the language in real world when applying PBL in English class. By contrast, students are more likely to listen to teachers and take notes in class under the traditional teaching mode, and there are fewer opportunities for them to speak the language in real-life situations. Hence, teachers cannot assess students' oral level accurately and correct their mistakes pertinently. However, PBL provides students with better and more sufficient opportunities for oral practice and allows students to output what they have learned. As a whole, the PBL

teaching mode is more flexible and has a greater influence on improving students' oral performance.

1.4. Research Gap and Contributions

Previous studies concerning PBL's impacts on improving speaking proficiency show that it could activate students' motivation to a large extent, and give students greater learning autonomy. Most significantly, PBL is helpful to enhance students' oral ability. However, it is found that the analysis into the specific implementing process of projects in PBL mode is more valued by a great deal of research, rather than analyzing the individual factors contributing to better speaking ability in details. This paper's major purpose is to explore the effectiveness of the PBL approach for enhancing students' fluency, vocabulary, grammar and pronunciation in speaking. In order to provide scientific and systematic analysis, the band descriptors in IELTS speaking, the scoring criteria ranging from beginner to native speaker, is used as a crucial reference for reviewing the results and validity of research methods in previous studies.

2. FLUENCY

2.1. The Importance of Fluency in the IELTS Speaking Test

Fluency is usually regarded with great significance when the speaking performance is being marked, since it demonstrates the competence of proficiency in communication, which acquires "the ability to produce sentences with ease, efficiency, without pauses or a breakdown of communication" [7]. From the perspective of the band descriptors of the IELTS speaking test, candidates, who receive a score of 6 out of 9, normally can be seen as a competent English user. It is mainly because the majority of university degree programs require the applicant to acquire that score in the speaking test. According to the above descriptions, a candidate with score 6, could speak at length without noticeable effort or loss of coherence, although language-related hesitation and repetition may occur occasionally. However, they could a range of connectives and discourse markers to express themselves with flexibility.

However, the mean performance of Chinese candidates (Mainland) for speaking tests was much lower than the average mean performance worldwide. This may be caused by the following major factors: a) speakers may not speak smoothly to deliver ideas; b) speakers may be afraid of making mistakes; c) speakers may have low confidence in the content of speech [8]. Thus, PBL is considered as an effective way to address those obstacles in oral speaking, due to the fact that the project itself brings real-life situations in class where students could "work collaboratively to plan, organize, negotiate, make their points, and arrive at a consensus on issues such as

what tasks to perform, who will be responsible for each task, and how the information will be researched and presented" [9].

2.2. The Implementation of PBL

Although there are discrepancies in the specific techniques in PBL projects, the majority of them share two similarities: one is that the project is designed as highly communicative, such as vlog making, storytelling, website designing. Research conducted by Wahyuni, Sujoko, and Teguh Sarosa, who implemented digital storytelling to improve senior high students' speaking skills, noted that accomplishing such project, students can actively "utilize language in real context for asking and refining questions, debating ideas, designing plans, collecting and analyzing data, drawing a conclusion, communicating ideas and findings, and creating products" [10]. The other similarity is involving technological software or device. Researches implementing Facebook, Vlog, as well as Weebly -a website builder, mentioned that the integration of technology contributes to a higher learning motivation since students may feel appealed to be electronical intertwined [11].

2.3. The Effectiveness and Limitation of PBL

The results of fluency enhancement are significant, based on the quantitative analysis such as the comparison between pre-test and post-test, together with questionnaires and interviews. In the learning project of Website designing, the mean scores of fluency in speaking increased 59%, while there was a more considerable rise of 76.8% in the fluency improvement of the digital storytelling project [8][10]. In addition, the other researcher Ryan Spring separated five specific elements to measure the variation of fluency improvement: "raw speech rate, articulation rate, number of pauses, phonation ratio and trimmed speech rate" [12]. His research revealed that participants made utterances overall much faster, whereas they paused less frequently but for longer in their post-tests.

Based on the previous studies, the increased fluency is mainly owing to the sufficient opportunities to practice the target language. Although the practical steps in each PBL vary greatly, there are three major stages before the final presentation: being familiar with the content by collecting information or data; discussing in groups as the first attempt to use the target language orally, and correcting errors in pronunciation and grammar while interaction.

Therefore, a higher level of proficiency in the content spoken by students could effectively raise their confidence to speak the target language in a much faster flow, as students tend to feel safe to speak in this "motivational atmosphere where a dynamic-interactive learning is highly valued" [12].

However, most studies on fluency merely conducted data comparison generally, instead of analyzing individual factors affecting fluency improvement. Apart from Spring's five elements, speech length, the frequency of hesitation and self-repetition should also be taken into consideration. Hence, it is difficult to conclude to what extent PBL influences each factor that is closely linked to spoken fluency, though this teaching method helps to enhance the overall performance of fluency in speaking tests [12].

3. LEXICAL RESOURCE

3.1. The Application of PBL in Improving Oral Vocabulary

To explore the use of PBL in teaching and learning, Diki Riswandi adopted a qualitative method using action research (AR). The purpose of it is to solve the problems that students need to face in the classroom. To collect data, the researchers used some observation lists, field notes and other tools. The observation list focuses on how do students participate during the pre-task stage, task cycle and language focus stage [13]. Therefore, field notes may be used to identify some aspects and learning processes reflected in teachings, such as appropriate teaching areas that need to be improved and an observation list of students' interaction with peers outside the scope of coverage.

Speaking test, in the form of scores, is used to describe students' oral ability, students' average score, and personal score strategies after implementation. In order to confirm the validity of the data, the triangulation method was used to conduct a questionnaire survey on the students at the end of the cycle. This is the data test used to confirm students' scores and their feelings. Some students were selected for interviews. The researchers only selected three students for the interview. For speaking evaluation, they conducted three times, including pre-test and post-test. There are five aspects of oral skills in the assessment, concluding comprehension, vocabulary, grammar, fluency and pronunciation.[13]

In this study, oral tests, questionnaires and interviews were used. But the problem is that some students are active while others are passive. Compared with the active students, the passive students may be less interested or have less sufficient vocabulary to output. The performance test conducted at the end of the year shows that the students' oral test has been improved.

This experiment also shows that the learning and teaching activities using PBL are successful, but it has limited significance for students' oral vocabulary improvement. Students' oral performance in the first cycle shows low scores in all aspects of vocabulary.

3.2. The Limitation and Solutions of PBL in Oral English Vocabulary

There are many previous studies that have proved that the PBL teaching model and flipped classroom teaching mode, which can enhance student speaking skills. However, there are problems such as students' participation is not high, the effect on students' oral ability is not ideal, and students' vocabulary skills have not been significantly improved. In recent years, PBL and flipped classrooms have been more and more widely used in higher education, especially in the Chinese university classroom. Teachers use these teaching models in the classroom to improve students' comprehensive quality and ability. In oral class, it is necessary to focus on improving language fluency, grammatical structure, vocabulary, pronunciation, etc. This study will review the previous literature and focus on the impact of the above two teaching models on students' vocabulary useability.

The above experiment shows that PBL has some limitations in improving oral English vocabulary [13]. Firstly, according to the learning situation, some students prefer class activities, some students like group activities, whereas others are more interested in personal activities. At the same time, based on this teaching method, online resource guidance can be appropriately utilized to help students enrich their vocabulary and let them show their harvest by recording videos. Students can obtain information faster, have more confidence and lessons, to improve their range of topic-related vocabulary and paraphrase ability, because they not only rely on their oral skills, but also on their understandings.

According to Koroğlu and Çakır, by the end of an eight-week treatment process speaking PBL in College English, the study indicates that PBL with flipped instruction based syllabus can help group students develop significantly in terms of fluency, coherence, lexical resource, grammar, pronunciation and accuracy skills [14]. Although their experiment is only based on data statistical analysis and lacks a large-scale random sampling questionnaire survey, the results reflect project-based activities to a certain extent, such as flipping classroom problem-solving, which is conducive to the cultivation of students' comprehensive learning ability.

However, there are still many problems in the combination of PBL and flipped classroom teaching mode in speaking English classrooms, which they have not considered in this study. Flipped classroom refers to re-planning the time inside and outside the classroom and transferring the decision-making power of learning from teachers to students. In this teaching mode, students can use classroom time to focus more on Project-based Learning and work with others to study and solve practical problems, so that students will gain a deeper understanding of all aspects of cognition in this process. Teachers no longer occupy a lot of classroom time to

teach information. Students need to complete autonomous learning and classroom display by consulting books, watching video lectures and listening to e-books before class. They can also discuss and comment with other students on social networking sites or learning platforms. Teachers can also participate in communication, and supplement and correct what students say in class. After class, students can independently plan learning time, content, rhythm and methods. Teachers use teaching method and cooperation method to meet students' personalized learning needs. Its purpose is to let students think actively in practice, cooperate together, obtain real experience and realize learning in the real sense.

In a flipped class, students are easily divided into several groups. During the group presentation, the teacher is similar to the judges, sitting under the stage and listening with other students, and will score and reward the students' performance. Other students, when it is not their turn to show a presentation, will not notice what the students on the stage say, and will not have classroom interaction. Therefore, most of the time, the application of flipped classrooms is equivalent to the mode of competition, which does not play the role described in the concept of PBL and does not effectively improve the comprehensive ability of all students.

In this classroom phenomenon, it is found that many students' associations have lost the opportunity to practice their oral pronunciation and learn new vocabulary because they do not participate in the interaction between the classroom and students. Therefore, how to solve the problems of low enthusiasm and low participation of students in the classroom, such as rewarding students who take the initiative to answer peers' questions in the flipped classroom, could be researched in the future.

4. GRAMMATICAL RANGE AND ACCURACY (GRA)

4.1. The Contributing Factors in Grammar Enhancement

According to the band descriptors of grammar in the IELTS speaking test, there are two main indicators: the range of complex structure and the density of errors. They decide the rating of grammatical performance. For example, scoring 5 in GRA means the candidates could only use basic sentences forms and usually contains errors causing comprehension problems, whereas a 6-score test taker could use a mix of simple and complex structures. The performance on grammatical errors also varies greatly: while the low-levels typically make mistakes on third-person -s and articles, their counterparts are rarely troubled by the same ones, instead of producing errors in a higher degree of attempted conditionals and passive voice [12]. However, these two

factors tend to influence each other, so they should be enhanced together theoretically. Otherwise, the overall performance of grammar would not be improved.

4.2. The Analysis of PBL Implementation

Understanding others and being understood in communication and discussion play a crucial part in a PBL lesson. Thus, comprehension problems are normally being tackled as a priority, which can be confirmed by the research conducted by Spring [15]. His results have demonstrated that participants made significant improvements in syntactic complexity, such as using more multiple clauses, coupled with the fact that participants produce more error-free clauses [15]. As is mentioned in the first part, students tend to have sufficient changes to correct errors in grammar while interacting, so that in the final presentation, the density of errors they make could decline sharply.

However, there is also some concern as to how much the implementation of PBL can improve grammar performance. The major one is still that the participation of individual students may vary considerably. There is a huge challenge for teachers to prepare a more detailed, well-prepared lesson plan, so that every student could be more highly involved in the class activity to use the target language. Another concern is the specific project being chosen for a PBL. Though communication is the core of PBL, some projects may pay more attention to presenting the final project. As a consequence, students may not expose their grammatical mistakes sufficiently if the project making, such as website design, contains more "silent" technological work.

5. PRONUNCIATION

5.1. The Phenomena in Pronunciation Teaching

In today's Chinese college classroom, it is common for teachers to ignore the training of students' language pronunciation. Especially for those colleges and universities with nonverbal characteristics, they have low requirements for students' language pronunciation, and some even have no requirements. At the same time, students have not received special training in pronunciation before entering colleges and universities. In addition, teachers and schools do not pay attention to education, so students' awareness of pronunciation training is even weaker. Students do not get corresponding practice in class, and they will not spontaneously practice pronunciation after class. Therefore, it is not difficult to find that in many college classes, when students answer questions, they will have problems such as inaccurate pronunciation, wrong stress position, inaccurate meaning group sentence breaks and wrong intonation and rhythm. In the state of lack of pronunciation correction, this has been the case for a long

time, resulting in students' habit of wrong pronunciation, or lack of confidence in students' speaking English, resulting in students' dare not speak in the oral test, and cannot achieve satisfactory results in the standardized test.

5.2. The Language Evaluation of Pronunciation

Pronunciation is one of the most under-researched areas in language assessment. In the first two cycles, Mariah and Robiasih divided the students into groups to perform audio recording group tasks. After the task, the teacher gives feedback to the students. The feedback includes pronunciation, grammar, vocabulary and fluency. Students evaluate and appreciate each other. In this process, it shows the positive impact of PBL, including the enhancement of students' group cooperation ability, the practice of role play in pairs, and the opportunity of speaking English. In the process of making audio, the teacher gives some suggestions and correction guidance for students' grammar and pronunciation. Students' grammatical errors are greatly reduced, and their mastery of vocabulary and pronunciation accuracy are improved to a certain extent. For the pronunciation section, the method used by the researchers is not to directly correct the students' pronunciation, correct the students' audio pronunciation for many times, and repeat the training in the experiment to let the students comment on each other. For example, when a teacher asks a student, what is the evaluation given to another student? The classmate's answer is "greet". Is it "great" to ask the teacher again? The student answered "great" again! Improve students' pronunciation accuracy in the repeated cycle of questions and answers. However, we can see from the experimental results that students can fully master the use of basic vocabulary and use changeable vocabulary accurately. In terms of grammatical expression, students generally have a great improvement. However, it does not reflect the change and improvement of pronunciation. At the same time, the limitations and negative effects of PBL are also reflected in the noisy and crowded classroom and the long production time required by students. Teachers also need to supervise students' extracurricular work activities and ways [16]. As can be seen from the above, the sense of the existence of pronunciation in examination and teaching is still quite low. The position of pronunciation in the evaluation of language standardization needs to be improved.

5.3. The Application of PBL in Pronunciation

PBL is supported as an interesting teaching approach since it provides several advantages. In this study. It helps students become more confident and independent. Then students can have autonomy in their learning, and can establish reflection or feedback from teachers and peers.

Secondly, PBL promotes students to participate in the classroom, transfer the knowledge learned in the course to real life, and even connect with interdisciplinary or learned knowledge. Even PBL can stimulate students' creativity and improve students' social, communication and cooperation skills. PBL is usually utilized in oral pronunciation teaching. Students need to preview practice with video or audio on the network, display and output in class, and finally, the teacher will correct the sound feedback, and then complete the review after class.

5.4. The Limitations of PBL on Pronunciation

Mariah and Robiasih have also studied the effect of PBL on students' oral English. Although the researchers had to correct students' pronunciation in this study, they did not show a specific way. At the same time, it also focuses on other aspects of oral skills. Can we guess that the PBL needle is the weakest for the improvement of oral pronunciation? Apart from that, they do not use the scoring criteria in standardized tests such as IELTS to judge students' mastery. Only from the performance of students' homework and practice, PBL can improve oral pronunciation and other factors.

Although many previous studies have shown that the PBL teaching method can significantly help students improve their oral skills and standardized test scores. However, in the process of practical operation, there are still many limitations. For example, students only improved their self-confidence and creativity and did not further strengthen more detailed pronunciation skills and scoring standards. The above research also reflects that we can only get feedback from peers and teachers through this teaching method. However, the final results of the experiment were not measured by the detailed standards of the standardized examination. If we only judge students' oral pronunciation skills from the perspective of classmates, peers, and teachers, this result may not be objective. In addition, the corresponding teaching scheme should be also adjusted according to the actual learning situation of students. At the same time, every once in a while, students' performance not only needs the feedback of teachers and peers but also needs to be tested according to the standard of standardized tests, to let students know what details they need to improve, to further let students understand and master the scoring standard of pronunciation.

5.5. Future Directions

Researchers should focus on the oral pronunciation part of oral skills, and attach more importance to the comparison between PBL and other methods.

At the same time, researchers can combine qualitative and quantitative research to explore targeted improvement since there has insufficient research on pronunciation in PBL. More discourse analysis can be

used in students' dubbing homework, public speaking, English debate and presentation to provide results in much more details.

6. CONCLUSION

Although many studies have shown that this teaching method can improve students' oral ability, it is aimed at reviewing the role of PBL on four factors of speaking: fluency, lexical resource, grammar range and accuracy, along with pronunciation.

The result shows that PBL has a positive influence on the enhancement of speaking proficiency. However, it is found that the influence of PBL on fluency, vocabulary, grammar and pronunciation is inconsistent: the impact on fluency and lexical resource is more significant than that in grammar and pronunciation. The main reason may involve the fact that though those projects are highly communicative, they are more preferable for the improvement of fluency and content-related vocabulary. In addition, the type of project selected in PBL could also strengthen the practice on fluency, rather than grammar and pronunciation.

Another benefit from PBL courses is that students become much more motivated and confident as students are given sufficient opportunities to use oral English in real context through debating and communicating ideas and findings.

However, PBL not only works for language proficiency improvement, but pays more attention to the high-level ability, and focuses more on problem-solving and comprehensive ability improvement, so that students' communicative skills and organizational skills could also be developed. This is also the difference between PBL and other teaching methods.

Hence, solely from the perspective of the criteria of standardized examination – IELTS – to analyze the effectiveness of PBL on the ability of English speaking may be insufficient. There would be other factors developed by PBL that can raise their confidence in using spoken English and improve speaking proficiency in turn. It could provide researchers new insight to assess the PBL in language learning and teaching.

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